

CLAIMS

What is claimed is:

5           1. A method for carrying out smooth handoff as a mobile station roams from a first base station to a second base station both served by a wireline subnet having a link layer different than the link layer of the wireless network serving the mobile station, the method comprising

10                 storing a shadow address in the first base station and the second base station, the shadow address corresponding to the mobile station and having a format compatible with the link layer of the wireline subnet,

15                 transmitting a frame containing the packet from the sending device over the wireline subnet using the shadow address as the link layer destination address of the packet, and

                  processing the frame received from either the first base station or the second base station in the mobile station.

2. The method as recited in claim 1 wherein the storing includes assigning the shadow address by the first base station.

20           3. The method as recited in claim 2 wherein the transmitting includes communicating the shadow address from at least one of the base stations to the sending device in response to an address resolution request by the sending device.

4. The method as recited in claim 1 wherein the mobile station has an IP layer address and the storing includes storing the IP layer address, the shadow address, and the wireless link layer address as entries in a watch list for the mobile station.

5 5. The method as recited in claim 1 further comprising, prior to the storing, sending the shadow address from the first base station to the mobile station and storing the shadow address in the mobile station.

6. The method as recited in claim 5 further comprising, after the sending, transmitting the shadow address to the second base station from the mobile station.

7. The method as recited in claim 5 further comprising, after the sending, transmitting the shadow address to the second base station from the mobile station as part of a standard message to register the mobile station with the second base station during roaming.

8. A method for carrying out smooth handoff of a mobile station from a first base station to a second base station both served by a wireline subnet having a link layer different than the link layer of the wireless network serving the mobile station, the method comprising

assigning a shadow address to the mobile station, the shadow address corresponding to the mobile station and having a format compatible with the link layer of the wireline subnet,

storing the shadow address in both the first base station and the second base station,

communicating the shadow address from at least one of the stations to the sending device in response to a address resolution request by the sending device,

5 transmitting a frame containing the packet from the sending device over the wireline subnet for detection in either the first base station and the second base station using the shadow address as the link layer destination address of the packet, and

processing the packet either as received from the first base station or the packet as received from the second base station in the mobile station.

10 9. The method as recited in claim 8 further comprising, prior to the storing, sending the shadow address from the first base station to the mobile station and storing the shadow address in the mobile station.

15 10. The method as recited in claim 9 further comprising, after the sending, transmitting the shadow address to the second base station from the mobile station.

20 11. The method as recited in claim 9 further comprising, after the sending, transmitting the shadow address to the second base station from the mobile station as part of a standard message to register the mobile station with the second base station during roaming.

12. The method as recited in claim 8 wherein the mobile station has an IP layer address and the storing includes storing the IP layer address, the shadow address, and the wireless link layer address as entries in a watch list for the mobile station.

5 13. The method as recited in claim 12 wherein the address resolution request includes the IP layer address of the mobile station, and wherein the method further comprises, after the storing, looking up the shadow address in the watch list with reference to the IP layer address contained in the address resolution request.

10 14. The method as recited in claim 8 wherein the address resolution request includes the IP layer address of the mobile station and the communicating includes looking up the shadow address in the watch list corresponding to the IP layer address of the mobile station and sending the shadow address in response to the address resolution request.

15 15. Circuitry for carrying out smooth handoff as a mobile station roams from a first base station to a second base station both served by a wireline subnet having a link layer different than the link layer of the wireless network serving the mobile station, the circuitry comprising

20 a storage device for storing a shadow address in the first base station and the second base station, the shadow address corresponding to the mobile station and having a format compatible with the link layer of the wireline subnet,

a receiver for receiving a frame containing the packet transmitted from the sending device over the wireline subnet using the shadow address as the link layer destination address of the packet, and

- 5 a processor for processing the frame received from either the first base station or the second base station in the mobile station.